

1   What is claimed is:

1       1. A method of reducing photoelectric device leakage  
2   current caused by residual metal ions in conjugated polymer,  
3   comprising the steps of:

4       (i) providing a conjugated polymer material or a  
5       precursor thereof for a photoelectric device;

6       (ii) forming a solution containing the conjugated  
7       polymer material or the precursor thereof, a  
8       chelating agent in an amount of from 0.01 to 50 wt%  
9       based on the weight of the conjugated polymer  
10      material or the precursor thereof, and a solvent,  
11      wherein the residual metal ions in the conjugated  
12      polymer material or the precursor thereof are  
13      chelated by the chelating agent; and

14      (iii) forming the solution obtained from step (ii) into  
15      a film for the photoelectric device.

1       2. The method as claimed in claim 1, wherein the  
2   conjugated polymer material or the precursor thereof is an  
3   organic light emitting polymer material, an electron  
4   transferring polymer material, or a hole transferring polymer  
5   material.

1       3. The method as claimed in claim 2, wherein the  
2   conjugated polymer material is selected from the group  
3   consisting of polyphenylene vinylene, polyfluorene,  
4   derivatives thereof, precursors thereof, and combinations  
5   thereof.

1       4. The method as claimed in claim 3, wherein the  
2   conjugated polymer material is poly(2,3-dibutoxy-1,4-

phenylene vinylene), poly(9,9-dioctylfluorene), or a precursor thereof.

5. The method as claimed in claim 1, wherein the chelating agent is selected from the group consisting of aminophenols, sulfur compounds, crown ethers, salicylimines, and combinations thereof.

6. The method as claimed in claim 5, wherein the chelating agent is selected from the group consisting of 8-hydroxyquinoline, oxinesulfonic acid, tetraethylthiuram disulfide, tetramethylthiuram disulfide, dithiol, 2,3-dimercaptopropanol, thioglycolic acid, potassium ethyl xanthate, sodium diethyldithiocarbamate, dithizone, diethyl dithiophosphoric acid, thiourea, 12-crown-4, 15-crown-5, 18-crown-6, dibenzo-18-crown-6, N,N'-bis(salicylidene)ethylenediamine, and combinations thereof.

7. The method as claimed in claim 6, wherein the chelating agent is 18-crown-6, 8-hydroxyquinoline, tetraethylthiuram disulfide, or N,N'-bis(salicylidene)ethylenediamine,

8. The method as claimed in claim 1, wherein the film is used in organic light emitting diode devices, organic solar cell devices, organic transistor devices, organic laser devices, organic memory devices, organic resistor devices, organic capacitor devices, or organic inductor devices.

9. A conjugated polymer composition, comprising at least the following:

(a) a conjugated polymer or a precursor thereof, and

4 (b) a chelating agent in an amount from 0.01 to 50 wt%  
5 based on the weight of the conjugated polymer  
6 material or the precursor thereof.

1 10. The conjugated polymer composition as claimed in  
2 claim 9, wherein the conjugated polymer or a precursor  
3 thereof is an organic light emitting polymer, an electron  
4 transferring polymer, or a hole transferring polymer.

1 11. The conjugated polymer composition as claimed in  
2 claim 10, wherein the conjugated polymer is selected from the  
3 group consisting of polyphenylene vinylene, polyfluorene,  
4 derivatives thereof, precursors thereof, and combinations  
5 thereof.

1 12. The conjugated polymer composition as claimed in  
2 claim 3, wherein the conjugated polymer is poly(2,3-dibutoxy-  
3 1,4-phenylene vinylene), poly(9,9-dioctylfluorene), or a  
4 precursor thereof.

1 13. The conjugated polymer composition as claimed in  
2 claim 9, wherein the chelating agent is selected from the  
3 group consisting of aminophenols, sulfur compounds, crown  
4 ethers, salicylimines, and combinations thereof.

1 14. The conjugated polymer composition as claimed in  
2 claim 13, wherein the chelating agent is selected from the  
3 group consisting of 8-hydroxyquinoline, oxinesulfonic acid,  
4 tetraethylthiuram disulfide, tetramethylthiuram disulfide,  
5 dithiol, 2,3-dimercaptopropanol, thioglycolic acid, potassium  
6 ethyl xanthate, sodium diethyldithiocarbamate, dithizone,  
7 diethyl dithiophosphoric acid, thiourea, 12-crown-4, 15-

8 crown-5, 18-crown-6, dibenzo-18-crown-6, N,N'-  
9 bis(salicylidene)ethylenediamine, and combinations thereof.

1 15. The conjugated polymer composition as claimed in  
2 claim 14, wherein the chelating agent is 18-crown-6, 8-  
3 hydroxyquinoline, tetraethylthiuram disulfide, or N,N'-  
4 bis(salicylidene)ethylenediamine.

1 16. The conjugated polymer composition as claimed in  
2 claim 9, which is used in organic light emitting diode  
3 devices, organic solar cell devices, organic transistor  
4 devices, organic laser devices, organic memory devices,  
5 organic resistor devices, organic capacitor devices, or  
6 organic inductor devices.

1 17. The conjugated polymer composition as claimed in  
2 claim 9, further comprising a solvent.